

REMARKS

Claims 1-9 and 11 remain in the application. Claim 10 has been cancelled.

Claims 1 and 11 are in independent form.

SUMMARY OF THE INVENTION

The subject invention comprises a low-cost sealing system as used to prevent the escape of fluids from a motor casing through which a rotating shaft extends. The invention is directed toward a novel centering feature for ensuring proper location of the static and dynamic sealing elements relative to the rotating shaft and the motor casing cover which function with a partial-turn fastener.

In claim 1, novelty is established by the centering section 12 being arranged on the level of, i.e. generally co-planar with, the partial-turn fastener 19. This allows the centering feature and the static sealing element 8 to operate with "a given contact pressure...in a corresponding area (3) of the motor casing cover (1)".

In amended claim 11, novelty is established in that the centering lugs 17 (an element of the centering section 12) use the opening clearance regions 19' to accomplish concentricity. These clearances 19' are simply pass-through areas in the cover 1 for the partial-turn fasteners 19 which are subsequently rotated to a locking position behind the land regions 3' of the cover opening 4. In other words, the centering lugs 17 always remain within the clearances 19' to provide the centering function even after the partial-turn fasteners 19 have been rotated behind the land regions 3'.

THE REJECTIONS

Claims 1-6 and 8-11 stand rejected under 35 U.S.C. §102(b) as being anticipated by Lansdale (EP 0727575 B1). Lansdale (cited by the Applicant as the most relevant prior art in Par. 0003 of the specification) discloses a shaft sealing device for a similar application. Lansdale, however, is distinguished from the invention as defined by claim 1 and amended claim 11 for the reasons described in Pars. 0004-0005 of the specification. More specifically, according to Lansdale, centering of its seal body 26 is accomplished by forming a precision recessed area 16 in the cover 10. The seal body 26, in turn, is manufactured with a precision peripheral edge 30 so as to engage the walls 18 of the precision recess 16 with a “tight fit”. (Lansdale: Column 2, lines 55-58.) This fit is so tight in fact, that Lansdale requires tapers 32 formed on the seal body to assist in the assembly process. (Lansdale: Column 3, lines 1-3.) As a result, the Lansdale cover plate requires a costly manufacturing process. In addition, Lansdale’s seal body is more expensive to make than the subject invention because it requires formation of a precision, full-circular edge 30. These tapers 32 add further to the manufacturing costs.

Relative to claim 1, Lansdale does not anticipate the invention because it does not teach or suggest a centering section being arranged “on the level of”, i.e. generally coplanar with, its partial-turn fastener feature 36. Rather, in Lansdale, its centering feature consists of the “tight fit” between the circumferential outer region 30 and the wall 18 of recess 16. As clearly shown in Figure 3 of Lansdale, the centering feature 30 is axially offset from its partial-turn fastener feature 36 – it is not arranged “on the level of the partial-turn fastener 19” as defined in Applicant’s claim 1.

Relative to amended claim 11, Lansdale does not anticipate the invention because

it fails to disclose or suggest centering lugs 17 receivable in clearances 19' provided in the cover opening 4 and which engage edges 20 of those clearances 19' as the partial-turn fastener 19 is rotated to a position behind the interposed land regions 3'. Instead, Lansdale centers its seal body by means of a "tight fit" of the circumferential outer region 30 against the wall 18 of precision-formed recess 16. In amended claim 11, the clearances 19' provide the centering function in addition to a simple pass-through function. Thus, they cooperate with both the partial-turn fastener 19 (by providing pass-through clearance) and with the centering lugs 17 (to accomplish the centering function).

NON-SUBSTANTIVE CLAIM AMENDMENTS

In claims 1, 5 and 6, the more limiting term "quarter-turn fastener" is replaced with the more general term --partial-turn fastener-- as used in claim 11. Also in claim 1, a typographical error relating to the reference number for the carrier is corrected.

In claim 11, the term "recesses" is replaced with the term --clearances-- to maintain consistency with the terminology used in the specification. Also, terms related to the dynamic sealing action between the carrier and said shaft (instead of between the opening and the shaft) have been amended in an attempt to improve clarity.

No new matter has been added.

CONCLUDING REMARKS

Accordingly, it is respectfully submitted that the prior art, and Lansdale in particular, fail to disclose each and every feature contained within the independent claims 1 and 11. The rejection under 35 U.S.C. §102 is thus understood to have been overcome.

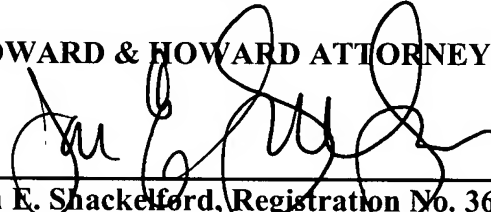
It is believed that this application now is in condition for allowance. Further and favorable action is requested. The undersigned representative of the Applicant respectfully invites a telephonic interview should the Examiner deem such warranted for the purposes of advancing prosecution in this application.

The Patent Office is authorized to charge or refund any fee deficiency or excess to Deposit Account No. 08-2789.

Respectfully submitted,

HOWARD & HOWARD ATTORNEYS, P.C.

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Date




Jon E. Shackelford, Registration No. 36,003
The Pinehurst Office Center, Suite #101
39400 Woodward Avenue
Bloomfield Hills, Michigan 48304-5151
(734) 222-1098

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Rainie L. Mills